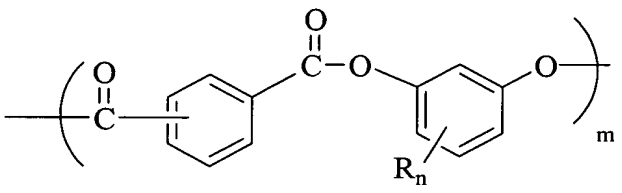
[0049] What is claimed is:

CLAIMS

1. A method for manufacturing data storage media comprising:

irradiating at least a portion of an organic polymer comprising a resorcinol arylate polyester with a UV beam having a wavelength of about 290 to about 400 nanometers so as to impart an energy of about 1 to about 20 milliwatt/square centimeter to the irradiated portion of the organic polymer.

2. The method of Claim 1, wherein the resorcinol arylate polyester has the structure of formula (XII)

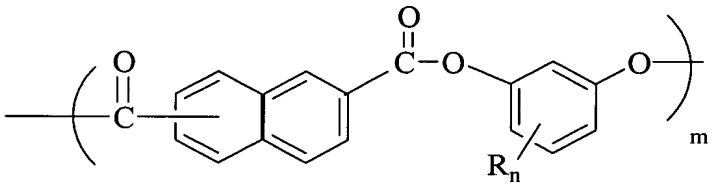


(XII)

wherein R is at least one of C_{1-12} alkyl or halogen, n is 0 to3, and m is at least about 8.

3. The method of Claim 2, wherein m is about 10 and about 300.

4. The method of Claim 1, wherein the resorcinol arylate polyester has the structure of formula (XIII)

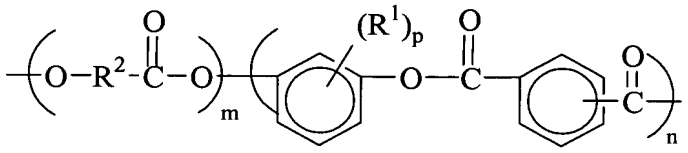


(XIII)

wherein R is at least one of C_{1-12} alkyl or halogen, n is 0 to3, and m is at least about 8.

5. The method of Claim 4, wherein m is about 10 and about 300.

6. The method of Claim 1, wherein the organic polymer has the structure of formula (XIV)



(XIV)

wherein each R^1 is independently halogen or C_{1-12} alkyl, m is at least 1, p is about 0 to about 3, each R^2 is independently a divalent organic radical, and n is at least about 4.

7. The method of Claim 6, wherein m is about 2 to about 200 and n is about 30 to about 150.

8. The method of Claim 1, wherein the organic polymer is further blended with a polycarbonate.

9. The method of Claim 1, wherein the organic polymer is irradiated for a time period of about 30 seconds to about 5 minutes.

10. The method of Claim 1, wherein the organic polymer is in the form of a film having a thickness of about 1 to about 1,000 micrometers.

11. The method of Claim 10, wherein the film comprises a single layer.

12. The method of Claim 10, wherein the film is multilayered.

13. The method of Claim 1, wherein the irradiation promotes a Fries molecular rearrangement in the organic polymer.

14. The method of Claim 1, wherein the irradiation produces a difference in refractive index of about 0.0001 to about 0.1 between an irradiated portion and an unirradiated portion of the organic polymer.

15. The method of Claim 1, wherein the irradiating produces a pattern in the organic polymer.

16. The method of Claim 1, wherein the organic polymer has a shrinkage of less than or equal to about 5 volume percent when compared with the volume of the organic polymer prior to the irradiation.

17. The method of Claim 1, wherein the organic polymer undergoes a shrinkage of at least 10 volume percent less than the shrinkage of a hydroquinone polyester when both are subjected to the same amount of irradiation per unit volume.

18. The method of Claim 1, wherein the organic polymer undergoes a yellowing of at least 50 percent less than the yellowing of a hydroquinone polyester when both are subjected to the same amount of irradiation per unit volume.

19. A holographic pattern manufactured by the method of Claim 1.

20. An article manufactured by the method of Claim 1.

21. A data storage device manufactured by the method of Claim 1.

22. A photonic communication device manufactured by the method of Claim 1.

23. A waveguide manufactured by the method of Claim 1.